AMPHIBIANS FROM A SECOND CENTURY ROMAN WELL AT TIDDINGTON SETTLEMENT, WARWICKSHIRE

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INTRODUCTION

Excavations at the Tiddington Roman Settlement in 1981 and 1982 produced amphibian remains that were wet-sieved from infillings of a 2nd century well (feature 131 of this locality). Palmer (1981) has provided a general account of the Tiddington Roman Settlement which is situated on the southeastern side of the River Avon, about 1.5 km east of modern Stratford (SP216555).

The well also produced fishes, birds, and numerous mammalian remains which are the subject of an unpublished paper by Dr. Jelle W.F. Reumer of the Natuurmuseum, Rotterdam.

Three to 5 litre samples from the well were sieved for plant remains onto 4 mm, 1 mm and 0.3 mm mesh sieves. The 1 and 3 mm portions were then sorted for plant remains and the skeletal elements picked free. The rest of each sample was then sieved into a 2 mm sieve. The vertebrate bones were then sorted out both macroscopically and by using a 4x microscope.

Only three species of amphibians were identified amongst the hundreds of amphibian bones recovered from the Roman well. These taxa are listed below with reference to criteria for their identification.

SYSTEMATIC PALAEONTOLOGY

Triturus helveticus (Razoumowsky) or *vulgaris* (Linnaeus) Palmate or Smooth Newt

This form is represented by a single right humerus from unit 6/1 of the Roman well. *Triturus helveticus* and *T. vulgaris* differ from the other British species *T. cristatus* in that the *crista ventralis* of the humerus is shorter and the shaft narrower (Holman and Stuart, 1991, Fig. 2). I am unable to separate the humeri of *T. helveticus* and *T. vulgaris* from each other.

***Bufo bufo* (Linnaeus)**
Common Toad
Bufo Bufo remains were found in five of the ten samples from the well that contained amphibians and were identified mainly on the basis of ilia and sacra. *Bufo bufo* is separable from the other British species, *B. calamita*, on the basis that its ilium has a lower, less triangular dorsal prominence and lacks the elongate ventral ridge on the shaft that occurs in *B. calamita* (Holman, 1989). Bohme (1977) has discussed the identification of European species of *Bufo* on the basis of sacra.

***Rana temporaria* Linnaeus**
Common Frog
Common Frogs were found in nine of ten samples from the well that contained amphibians and were also identified mainly on the basis of ilia and sacra. Holman (1985) has shown that the ilia of *Rana temporaria* differ from other European species in having the ilial blade (vexillum of Bohme, 1977) depressed anteriorly. Hallock, Holman and Warren (1990) have discussed identification of *R. temporaria* on the basis of sacra.

DISCUSSION

Amphibian occurrence and abundance in samples from the 200 AD Roman well at Tiddington is shown in Table 1. Numbers of individuals in Table 1 are expressed as a minimum number of individuals in each sample. A "minimum number" reflects the most numerous unpaired or left or right element of a given taxon in each sample. *Rana temporaria* is abundant, *B. bufo* much less so, and *Triturus* is rare.

Possible Access to the Well Trap. – Access to the well trap might have been facilitated by the human inhabitants of the area who had cleared large portions of land to grow cereals (Moffett, in press). These deforested patches must have provided habitat for the Field Voles which comprised about 16% of the mammalian fauna of the well (Reumer, n.d.); and should have provided places for *Rana temporaria* to wander, especially during periods of rain or other moist times of the year.

Possibly the fact that the more terrestrial Common Toad might have been more shy of drop offs than the Common Frog may account for the fact that *B. bufo* was much less abundant.

But it may be that the relative abundance of the two species merely reflects local population success based on a variety of factors.

Relative Abundance of Common Frogs and Common Toads in Flandrian and Historic Ancient Sites. – In eight of the nine Flandrian and historic ancient herpetological assemblages in Britain that I am aware of, *Rana temporaria* is more abundant that *Bufo bufo* (Table 2).

But of more interest, perhaps, is the fact that *B. bufo* and *R. temporaria* comprise most of the herpetofauna of these ancient assemblages. This is noteworthy because these two species (with the possible exception of the Smooth Newt) are the most common herptiles in Britain today (*vide* Cooke and Scorgie, 1988).

This leads to various speculations which are beyond the scope of this paper. Moreover, such speculations will need to be documented by finds of additional and well-dated ancient herptile assemblages. But it might be tempting to suggest that modifications caused by the human settlement in the Tiddington area had already caused some depletion in the other herpetological populations.

TABLE 1. Amphibian Occurrence and Abundance in Samples from Well 131*

SAMPLE	4	5/1	5/2	5/3	5/4	5/5	5/6	5/7	6/1	6/2	n	%
Triturus sp.	0	0	0	0	0	0	0	0	1	0	1	1.3%
Bufo bufo	1	0	0	0	1	1	1	1	3	0	8	10.3%
Rana temporaria	11	1	2	5	3	0	13	7	26	1	69	88.5%
	12	1	2	5	4	1	14	8	30	1	78	100.1%

*Based on Minimum Number of Individuals

TABLE 2. Relative Abundance of *Bufo bufo* and *Rana temporaria* at Ancient British Sites*

	Bufo bufo	*Rana temporaria*	Other Herptiles
Ightham, Kent Flandrian Fissures (Holman, 1985)	12 (2.7%)	391 (87.1%)	46 (10.3%)
Warton, Lancashire Flandrian Sinkhole (Holman, 1987)	3 (14.3%)	16 (76.2%)	2 (9.5%)
Chudleigh, Devon Flandrian Cave (Holman, 1988)	124 (68.1%)	36 (19.8%)	22 (12.1%)

Tiddington 200 AD Roman Well (This Paper)	8 (10.3%)	69 (88.5%)	1 (1.3%)
Repton, Derbyshire Various Sites (Raxworthy et al., 1990):			
8th century	2 (100%)	0 (0.0%)	? (0.0%)
8th-9th cenutry	63 (100%)	0 (0.0%)	? (0.0%)
9th century	64 (97%)	2 (3.0%)	? (0.0%)
14th-15th century	16 (66.7%)	8 (33.3%)	? (0.0%)
16th century	2 (66.7%)	1 (33.3%)	? (0.0%)

*Based on Minimum Numbers of Individuals at Each Site

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